

International Cooperation on Environmental Issues in the Puget Sound/Georgia Basin: What Environmental Issues Could Threaten Regional Security?

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Abstract

Security is a growing concern worldwide, and homeland security has captured the attention of the United States over the past year and a half. In addition, awareness of the concept of environmental security—the notion that environmental degradation may have security implications—has been growing over the past decade. Internationally, environmental issues have direct links to security, as evidenced by the Middle East water disputes. While environmental security has not historically been a topic of major concern within the national boundaries of the United States or Canada, the environmental and development challenges that we’re facing in the Puget Sound/Georgia Basin (PS/GB), coupled with this growing concern for security, prompted a query to consider whether environmental or natural resource problems could pose a serious threat to regional cooperation or stability in the PS/GB and, hence, deserve more attention from regional decision-makers. This discussion is expected to provide a useful focus for future collaboration and integration in the PS/GB.

Background

Transboundary environmental issues, such as water flows and water quality, are increasingly cited in the literature as sources of international tension, as evidenced in the Middle East. Although environmental degradation and scarcity issues have not been linked to formal declarations of war, when coupled with other factors such as extreme poverty, transboundary environmental impacts have contributed at some level to international conflict (Dokken, 2001). Current trends in the PS/GB and the possibility of disruptive events prompted an enquiry as to whether environmental degradation could pose a future threat to regional security. By understanding possible sources of conflict and identifying potential problem holders, policymakers might be better positioned to mitigate or avoid potential conflict. This study was driven by two primary questions:

- What types of natural resource and environmental issues could potentially threaten regional stability and cooperation in the PS/GB?
- Are processes and mechanisms in place for cross-border collaboration and dispute resolution on these issues?

Information for this study was collected through literature searches on environmental security, international conflict and cooperation, and PS/GB ecosystem management activities and environmental issues as well as through interviews with representatives from both U.S. and Canadian agencies, universities, and commercial interests.

Overview of Environmental Security

What is environmental security?

A rationale for environmental security is provided by P.H. Gleick (1991), who states

A nation or region bent on protecting its “security” in the future will have to concern itself as much with flows of the planet’s geophysical capital as it does today with the flows of economic capital; as much with the balance of atmospheric trace gases as with the balance of military power; as much with monitoring the Earth’s vital signs as with monitoring the arsenals of destruction.

There is no widely accepted definition of environmental security. A narrow definition of environmental security emphasizes ways in which resource scarcities and environmental degradation can create international conflict, thereby increasing the likelihood of violence and war. But what place does the concept of environmental security have among friendly nations? A broader interpretation of environmental security might cover any major ecological development that seriously threatens the welfare of human society, even without facing the likelihood of war (Soros, 1995). Such threats might be posed by global warming or desertification or loss of biodiversity. At least one of three main points can be

found within most definitions of environmental security—the security of the environment from degradation, the impact of environmental change on economic and social institutions, or environmental change as a cause of political upheaval (Williamson, 1998).

For the purpose of this study, we considered a broader definition of environmental security:

Environmental Security is the relative safety from political, economic and social upheaval as a result of environmental change, be it slow or rapid, both within nations and across national borders (Glenn and Gordon 1998).

This definition encompasses the cross-border issues of environmental security. It is not the problem of one nation, but of an environmental region, an ecosystem, that can encompass two or more nations. The PS/GB region is one such ecosystem.

What does environmental security mean to the U.S. and Canadian governments?

The U.S. government has made some effort over the past decade to incorporate the concept of environmental security into the operations of its federal agencies. Under the Clinton Administration, efforts were made to convey the importance of environmental security at the highest levels of U.S. government and to create a unified vision to support cooperation among government agencies. In 1996, a memorandum of understanding known as the Environmental Security Initiative was signed by the Secretaries of the Department of Energy, the Department of Defense, and the Environmental Protection Agency and subsequently supported by the Department of State, to provide a framework for interagency environmental security activities abroad. The primary goals of the framework were to reduce environmental stresses, improve conditions for regional and national stability, and help form partnerships with organizations in the host countries (U.S. Department of State, 2001).

Building from this interagency agreement, the U.S. Department of State released a report in 2001 that defines environmental security in fairly broad terms and identifies specific environmental security threats. The report states

Environmental security is an element of regional and national security. It encompasses the mitigation and prevention of energy threats, including threats to sources and supply lines, and environmental risks and related stresses that directly contribute to political and economic instability or conflict in foreign countries or regions of importance to the United States. Moreover, it addresses selected energy, environmental, and related national security concerns that pose a direct conflict with United States foreign policy. Although environmental security threats may not necessarily directly harm U.S. territory, they may still threaten national security because of potential harm to the territories of U.S. allies and other nations where the U.S. has strategic interests or due to indirect, adverse effects to the global economic system. Environmental security concerns include those from nuclear contamination, spent fuel, and waste; threats to energy resources; contamination, degradation or depletion of essential environmental resources; or environmental problems from failing infrastructure as may threaten U.S. security or undermine foreign regional stability (U.S. Department of State 2001).

Despite casting environmental security in fairly broad and comprehensive terms, the report's discussion of specific environmental security threats focuses on environmental cleanup of radioactive waste, dealing primarily with the former Soviet Union. There is little evidence that this concept shapes the U.S. government agency activities on U.S. territories.

The Canadian government has not established an operating definition of environmental security to help shape policy at the federal level. Furthermore, security was not found to be a concept used to define environmental priorities and actions in the PS/GB region. Interviewees discussed PS/GB environmental security primarily in the context of emergency response and near-term security issues (e.g., infrastructure safety and vulnerability, including water and energy infrastructure) and not in terms of longer-term security threats.

Why Puget Sound/Georgia Basin?

If environmental security is not on the minds of regional or national decision-makers, why would it be relevant to the PS/GB region? In addition to sharing a national border, the PS/GB region is characterized by a high level of interdependence in all aspects of sustainability. British Columbia and Washington State have strong energy, economic, and ecological interdependence and are simultaneously faced with rapid population growth rates, which places additional pressure on the region's fragile ecosystem. Because of this interdependence, the actions taken on one side of the border may pose serious implications for people and their ecosystems on the other side of the border.

Energy Interdependence

Canada is the largest supplier of energy to the United States, accounting for 94% of natural gas imports, close to 100% of U.S. electricity imports, and more crude and refined oil products than any other foreign supplier (Kergin, 2002). In fact, Canada is the largest source of petroleum to the United States, accounting for 17% of the U.S. total (Energy Information Administration, 2002). This energy trade is particularly important here in the PS/GB because Canada powers Washington and several other western states. Dominating Washington's imports from Canada in 2001 was more than \$6 billion in energy. Natural gas accounted for over \$5 billion, crude petroleum for \$788 million, electricity for \$205 million, and petroleum and coal products for \$111 million. Much of the recorded imports of energy into Washington State were bound for other states, particularly California (Canadian Embassy, 2002).

Economic Interdependence

British Columbia and Washington have an important trading relationship. Washington State sold almost \$3 billion worth of goods to Canada and imported over \$10 billion from its northern neighbor in 2001. Washington's leading exports to Canada include aircraft, fuel oil, fish and marine animals, and paper and paperboard, which totaled over US\$890 million in 2001. Washington State's leading imports from Canada during this same period were natural gas, crude petroleum, aircraft, softwood lumber, and electricity, which totaled US\$6,620 million (Canadian Embassy 2002).

British Columbia is a resource-based economy, dependent on international trade. Three-quarters of its seafood and forestry products and almost all its mineral products are destined for international markets (primarily the United States and Japan) (Martin and Ogilvie 2001). The proportion of total exports to the United States has increased significantly in the past decade from approximately 42% in 1990 to nearly 68% in 2000. Of Canada's \$3 billion in exports to Washington State in 2000, \$2.8 billion came from British Columbia. The result is a relationship of growing economic dependence between the two countries, particularly in the PS/GB region.

Ecological Interdependence

Even though the PS/GB is an ecologically diverse region, a synoptic view of the region reveals several shared ecological features, including

- Mountain ranges – The Cascade Mountain Range serves as a wildlife corridor and habitat for threatened and endangered species.
- Major waterways – These include the Columbia River and an ocean ecosystem in which fish move freely across national boundaries.
- Airsheds – Whatcom County in Washington State and the Lower Fraser Valley of British Columbia share a common airshed.
- Aquifers – The Abbotsford-Sumas Aquifer covers 100 square miles and is used by approximately 100,000 people.

Population Growth

The PS/GB region is faced with high levels of continued population growth, particularly in Kitsap and Thurston counties of Washington State and in the Squamish and Sunshine Coast districts of British Columbia. Currently 7 million people live in the PS/GB region, and this number is projected to reach 9 million by 2020 (Transboundary Georgia Basin-Puget Sound Environmental Indicators Working Group, 2002). Such growth levels will put even greater pressure on our shared natural resources and environment.

Together, these economic-energy-environmental linkages suggest to us that as a region we are interdependent in many aspects of sustainable development. The prospect of environmental change could be seriously disruptive to the growing population living in this region.

Characterizing International Conflict-Cooperation

In general, the United States and Canada have been extremely cooperative neighbors. The two countries share treaties and agreements to address the management of shared resources, and when tensions do arise, issues are generally resolved before escalating to serious conflict. Looking into the future, it is important to ask whether these cooperative mechanisms will continue to stave off conflict before it escalates.

A scale of events that characterize conflict to cooperation on international transboundary issues can provide a useful framework for thinking about U.S.-Canadian relations in the PS/GB region. Over the past three decades, a number of methods for tracking, categorizing, and analyzing international conflict and cooperation events have been defined and refined in the literature, such as the classic World Event Interaction Survey-WEIS method, (McClelland, 1976), the Conflict and Peace Data Bank (COPDAB) (Azar, 1982), and the Integrated Data for Events Analysis-IDEA approach (Virtual Research Associates, Inc., 2002). Most recently, Yoffe and Larson (2002) adapted the COPDAB scale of conflict to cooperation developed by Edward Azar to incorporate terminology and considerations specific to international water issues. The scale defines conflictive and cooperative event categories ranging from extreme conflict (-7 – Formal declaration of war) to complete cooperation (+7 — Voluntary unification into one nation), with several less extreme types of events in between such as “diplomatic-economic hostile actions” and “official verbal support of goals, values, or regime.” The scale provides a useful framework for characterizing a broader set of transboundary environmental issues.

- 7 Formal declaration of war
- 6 Extensive war acts causing deaths, dislocation or high strategic cost
- 5 Small scale military acts
- 4 Political-military hostile actions
- 3 Diplomatic-economic hostile actions
- 2 Strong verbal expressions of hostility
- 1 Mild verbal expressions displaying discord (unofficial and official)
- 0 Neutral or non-significant acts
- +1 Mild verbal support - minor official exchanges, talks or policy expressions
- +2 Official verbal support of goals, values or regime
- +3 Cultural or scientific agreement or support (non-strategic) (e.g. cooperative working groups)
- +4 Non-military economic, technological, or industrial agreement (e.g. cooperative projects for irrigation, watershed management)
- +5 Military economic or strategic support
- +6 Major strategic alliance, treaty
- +7 Voluntary unification into one nation.

Analysis of International Cooperation and Conflict in the Puget Sound/Georgia Basin

Several instances of transboundary cooperation and conflict on environmental issues in the PS/GB were characterized using the event categories defined by Yoffe and Larson (2002). This tool for events data analysis was selected because it incorporated considerations specific to international water issues and was thought to be most applicable to other environmental issues in the region.

Not surprisingly, the region is characterized by a significant amount of cooperation around transboundary environmental issues. Although not at the extremes (i.e., acts of war or voluntary unification into one region), there were several instances of cooperation and conflict over resource issues in the region. A few examples are displayed in Table 1, mapped to the Yoffe and Larson scale.

Table 1. U.S. and Canadian Cooperation and Conflict on Transboundary Environmental Issues

Scale Value	International Exchange	Description
Instances of Cooperation		
+6	Columbia River Treaty	Signed by the United States and Canada in 1964 to coordinate flood control and electrical energy production in the Columbia River Basin.
+4	Pacific Salmon Agreement	Signed in 1999 to settle differences over implementation of the 1985 Pacific Salmon Treaty; provides direction for harvest sharing, coordinated management, habitat protection, and restoration.
+3	Environmental Cooperation Council	Entered into by British Columbia and Washington State in 1992 to ensure coordinated action and information sharing on matters of mutual environmental concern. International task forces have been established on transboundary issues, such as management of the Abbotsford-Sumas Aquifer and of air quality in the Lower Fraser Valley/Pacific Northwest airshed.
+3	Transboundary Georgia Basin-Puget Sound Environmental Indicators Working Group	Established to develop the Georgia Basin-Puget Sound Ecosystem Indicators Report (published in 2002). The working group tracked six indicators, based largely on availability of information, including population, air quality and inhalable particulates, solid waste, persistent organic pollutants, species at risk, and terrestrial protected areas.
+3	Marine Spill Prevention Cooperative Agreement	Signed in 1995 by the Minister of British Columbia Environment, Lands and Parks, and the Administrator of the Washington Department of Ecology (formerly Office of Marine Safety) to promote the cooperation on reducing the risk of spills.
Instances of Conflict		
-4	Salmon Wars	Characterized by conflicts over distribution of annual salmon harvests under the Pacific Salmon Treaty. Events during the salmon wars might be classified as "politically hostile acts." For example, the Canadian Fisheries Department seized U.S. fishing boats off Vancouver Island in 1997.
-3	Sumas 2	Washington State's proposed gas-fired power plant, to be situated one-half mile south of the U.S.-Canadian border, could potentially contribute to the Lower Fraser Valley's already taxed airshed. Environment Canada filed a petition with the U.S. Environmental Protection Agency (EPA) Environmental Appeals Board to challenge the air emissions permit.
-3	Lake Roosevelt	A petition was filed with the EPA to determine whether Lake Roosevelt was a priority Superfund cleanup site; the U.S. requested that samples be taken from the lake. In 2003, the Canada Department of Foreign Affairs and International Trade sent a letter to the U.S. Embassy denying that request in light of potential liabilities.

In addition to considering historic examples of conflict and cooperation around transboundary environmental issues, the study team asked interviewees what types of issues the latter thought might lead to future conflict. The issues cited most frequently were air quality (including energy production and transportation), water quantity and availability (including impacts of climate change), and, to a lesser extent, species at risk (including development and habitat loss). These issues are more likely to have longer-term, indirect, and potentially severe impacts. For example, there is evidence that air pollution is contributing to global climate change, as well as to public health problems such as higher asthma rates. These air pollutants come from diverse sources that are difficult to track with specificity (e.g., the Asian brown cloud coming across the Pacific). As another point of illustration, climate change is likely to affect snow pack, snowmelt, and the hydrologic cycles in the PS/GB. Such problems as decreased regional water availability will not surface immediately, but over the long term could have tremendous economic, environmental, and public health impacts.

One interviewee observed that no current means of governance exists for some of these issues. In addition to the difficulty with tracking impacts from a technical perspective, institutional planning and budget cycles also pose challenges to dealing with longer-term and multi-jurisdictional issues. While there is certainly activity within agencies to deal with these issues at a technical level (e.g., data collection and modeling), the issues higher on the agendas of policy-makers are nearer-term crises.

Observations

Results of the literature search and interviews with representatives of both U.S. and Canadian stakeholder groups led to several key observations about the level of threat to regional security posed by environmental issues:

- **Environmental security does not resonate with people in the PS/GB.** Even though security and environment are independently on the radar screens of many in the region, people who deal with environmental issues in the PS/GB do not currently frame issues in terms of security threats. This is probably due to the fact that the PS/GB currently is a resource-abundant and economically prosperous region. People likely will not view environmental problems as security concerns until a situation becomes dire.
- **Current mechanisms of cooperation appear to be effective for current issues.** Numerous instances of cooperation (e.g., working groups, agreements, and treaties) were identified in the region, with occasional instances of conflict. However, it is possible that the current mechanisms for cooperation may not be sufficient to ensure a cooperative response to major disruptive events (e.g., unexpected seasonal water shortages driven by climate change).
- **The “Cooperation-Conflict Scale” could be a useful tool for monitoring trends around specific issues.** While the scale was useful for categorizing past events and understanding what types of issues have escalated in the past, it is not clear whether it will be a useful barometer for anticipating future cooperation and conflict. This tool should be evaluated further.
- **Cooperation on water issues tends to focus on water quality rather than quantity.** Most existing mechanisms for cooperation on water in the region focus on addressing water quality issues, such as dissolved gas and pollution implications for marine life habitat. The Columbia River Treaty (enacted in 1961) is the cooperative international agreement addressing water quantity and flow in the region. The treaty is up for renewal in several years and may be a difficult negotiation, considering the current and likely future situation with respect to water supply and demand in the region.
- **There is a need and an opportunity to develop a common vision for addressing long-term issues.** Issues such as water availability, which may not pose an immediate threat, need to be the focus of a regional, international dialogue that addresses the longer-term consequences to the various aspects of regional sustainability in the Puget Sound/Georgia Basin.

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